

# Purchase Order Receipt Listing

Monday, February 06, 2017 1:10:40 PM

All amounts are calculated in domestic currency.

All Vendors PO ID PO35149 Receipt Dates from 2/3/2017 to 2/3/2017 All Line Item Types  
All Item ID/GL/WOs All Rec. Employees All Currencies  
Grouped by Vendor ID

Purchase Order ID/ Curr Type	Line Nbr/ Insp Req	Project ID	Reference/ Description/ Cert Std	PO U/M / Stock U/M	Required Date Required Qty	Recv Date/ Recv Emp	Recv Qty (PO U/M)	Cost Per Unit/ Recv Value	Inspected Qty/ Rejected Qty (PO U/M)	MRB Qty/ MRB Reject Qty	Book Amt
<b>Vendor ID \ Vendor Name</b> VU-TWMM001 TW Metals											
PO35149	1		M304TR0.500W.035 f		2/6/2017	2/3/2017	60.0000		0.0000	0	\$0.00
USD	No		304 RD Tube .500 x .035W		60.0000	PLOU01			0.0000	0	
			m136760								
	2		M304TR0.750W.049 f		2/6/2017	2/3/2017	100.0000		0.0000	0	\$0.00
	No		304 RD Tube .750 x .049W		100.0000	PLOU01			0.0000	0	
			m136760								
	3		M4130NT0.750W.04 f		2/6/2017	2/3/2017	47.8330		0.0000	0	\$0.00
	No		9		40.0000	PLOU01			0.0000	0	
			4130 RD Tube .750 x .049W								
			m136760								
	4		M6061T6T1.000W06 f		2/6/2017	2/3/2017	24.0000		0.0000	0	\$0.00
	No		5		20.0000	PLOU01			0.0000	0	
			6061T6 RD TUBE 1.00 x .065W								
			m136760								
	5		71401-45		2/6/2017	2/3/2017	1.0000		0.0000	0	\$0.00
	No		PROCUREMENT QUALITY CLAUSES		1.0000	PLOU01			0.0000	0	
			m136760								

Total Received Quantity: 232.8330  
Total Qty to Inspect (PO U/M): 0.0000  
Total Reject Quantity: 0.0000  
Total Receipt Value: \$0.00  
Total Balance Due Quantity: 0.0000



O'Neal High-Performance Metals Group



Packing Slip

ORDER NO.: 60624597

FROM: CRAN

PAGE 1

CUST NUMBER: 1203820  
SOLD TO:  
DART AEROSPACE LTD  
1270 ABERDEEN ST  
HAWKESBURY ON  
CANADA

CN K6A 1K7

70.039 REQ.DATE: 02/06/17 CONFIRMED  
SHIP TO:  
DART AEROSPACE LTD  
1270 ABERDEEN ST  
HAWKESBURY ON  
ONTARIO CANADA

CN K6A 1K7

SALESPERSON: DONNA SMALLEY  
TERMS: NET 30 DAYS  
F.O.B.: SHIPPING POINT  
CUST ORD NO.: PO35149

SHIP BY: 02/01/17  
VIA: COMMON CARRIER  
FREIGHT: PREPAID  
RELEASE NO.:  
RECEIVING PHONE:

LINE ITEM DESCRIPTION WIDTH LENGTH  
0001 36449 SMLS CD 304/L A269 1/2 OD X .035 WA 20' ML

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT
	60.000 FT	60.000 FT	60.000 FT	10.426

PCS  
3

\*\* 1 TEST REPORTS REQUIRED \*\*  
\*\* 1 CERTS REQUIRED \*\*

ECCN: 2B999.g Export License: NLR Expiration Date: 0/00/00  
PO:49354071 HT:YX1602588 PC: 3 CUSTOMER QTY: 60.000 UOM FT  
MLT:CHINA MFG:CHINA SLB/CL:10-40

0002 36860 SMLS CD 304/L A269 3/4 OD X .049 WA 20' CL

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT
	100.000 FT	100.000 FT	100.000 FT	36.672

PCS  
5

\*\* 1 TEST REPORTS REQUIRED \*\*  
\*\* 1 CERTS REQUIRED \*\*

ECCN: 2B999.g Export License: NLR Expiration Date: 0/00/00  
PO:49342471 HT:YX1501783 PC: 5 CUSTOMER QTY: 100.000 UOM FT  
MLT:CHINA MFG:CHINA SLB/CL:11-63

0003 33047 CDS 4130 6736 3/4 X .049 17/24 FT

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT
	40.000 FT	47.833 FT	47.833 FT	17.541

PCS  
2

\*\* 1 TEST REPORTS REQUIRED \*\*  
\*\* 1 CERTS REQUIRED \*\*

ECCN: 9A991.d Export License: NLR Expiration Date: 0/00/00  
PO:49353474 HT:598618 PC: 2 CUSTOMER QTY: 47.833 UOM FT  
MLT:GERMANY MFG:GERMANY SLB/CL:1625993

SP 17-02-6

THANK YOU FOR THIS ORDER

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE  
PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL  
REVIEW.  
<http://www.twmetals.com/invoice-terms.html>



O'Neal High-Performance Metals Group



**Packing Slip**

ORDER NO.: 60624597

FROM: CRAN

PAGE 2

CUST NUMBER: 1203820  
SOLD TO:  
DART AEROSPACE LTD  
1270 ABERDEEN ST  
HAWKESBURY ON  
CANADA

NET WGT:

70.039 REQ.DATE: 02/06/17 CONFIRMED  
SHIP TO:  
DART AEROSPACE LTD  
1270 ABERDEEN ST  
HAWKESBURY ON  
ONTARIO CANADA

CN K6A 1K7

CN K6A 1K7

SALESPERSON: DONNA SMALLEY  
TERMS: NET 30 DAYS  
F.O.B.: SHIPPING POINT  
CUST ORD NO.: PO35149

SHIP BY: 02/01/17  
VIA: COMMON CARRIER  
FREIGHT: PREPAID  
RELEASE NO.:  
RECEIVING PHONE:

LINE ITEM DESCRIPTION

0004 43284 D6061-T6 1 OD X .065 WA ✓

WIDTH

LENGTH

12 FT ML

CLN# ORD QTY  
20.000 FT

INVOICE QTY  
24.000 FT ✓

SHIPPED QTY  
24.000 FT ✓ WT  
5.400

PCS  
2

\*\* 1 TEST REPORTS REQUIRED \*\*

\*\* 1 CERTS REQUIRED \*\*

ECCN: EAR99

PO:49353002 HT:F002189270002 PC: 2 Export License: NLR

Expiration Date: 0/00/00

MLT:UNITED STATES MFG:UNITED STATES CUSTOMER QTY: 24.000 UOM FT

SLB/CL:220852

BROKERS KUEHNE AND NAGEL LTD

AREA	TYPE OF PKG	PKGS	GRS WEIGHT	WIDTH	LENGTH	HGHT
B	CARTON	1.000	73.000		24.5000	

BY: TB  
RT 000-

1.000 73.000

UNLOAD TYPE: NONE SPECIFIED

SP1702-6

DATE SHIPPED

DATE FILLED

**THANK YOU FOR THIS ORDER**

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE  
PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL  
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O'Neal High-Performance Metals Group



**Packing  
Slip**

ORDER NO.: 60624597

FROM: CRAN

PAGE 3

CUST NUMBER: 1203820	NET WGT: 70.039	REQ.DATE: 02/06/17	CONFIRMED
SOLD TO:	SHIP TO:		
DART AEROSPACE LTD	DART AEROSPACE LTD		
1270 ABERDEEN ST	1270 ABERDEEN ST		
HAWKESBURY ON	HAWKESBURY ON		
CANADA	CN K6A 1K7	ONTARIO CANADA	CN K6A 1K7

SALESPERSON: DONNA SMALLEY	SHIP BY: 02/01/17
TERMS: NET 30 DAYS	27 ENGLEHARD DRIVE
F.O.B.: SHIPPING POINT	MONROE TWP NJ 08831
CUST ORD NO.: PO35149	
VIA: COMMON CARRIER	
FREIGHT: PREPAID	
RELEASE NO.:	
RECEIVING PHONE:	

"TW Metals MSDS data is available on our web site at [www.twmetals.com](http://www.twmetals.com). MSDS data can be found under the Technical Resources Tab, Product Statistics & Data and the TW Metals MSDS's heading. If you do not have web site access you may telephone 610-458-1300 and we will mail or fax a copy of our current MSDS data to your location."

# "CERTIFICATE OF CONFORMANCE"

"TW Metals certifies that the material supplied on this purchase order and contained in the heat/lot number referenced above has been manufactured, inspected, and tested in accordance with the material specification. These records are on file at TW Metals. Packaging material for shipments to Europe and China consists of manufactured wood products and complies with the European emergency measures for coniferous non-manufactured wood packing material"

Authorized Test Report Clerk Cop Leamer Date: 2/01/17

These commodities have been exported from the United States in accordance with the U.S. export control laws, export administrations regulations. Diversion contrary to U.S. law prohibited.

**THANK YOU FOR THIS ORDER**

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL REVIEW.  
<http://www.twmetals.com/invoice-terms.html>

**PUFA™**

Producer of Premium Stainless Steel Seamless Tubes

# MILL TEST REPORT

<b>Purchaser.:</b> TW METALS-Cranbury				<b>Certificate No.:</b> 2016-12-80					
<b>Contract No.:</b> TWM P.O.No.: M49354071				<b>Date of Issue.:</b> 2016.12.17					
<b>Commodity:</b> Stainless Steel Seamless Tubes				<b>Specifications:</b> ASTM A213-15c/ASME SA213-15/ASTM A269-15a EAW					
<b>Process:</b> Cold Drawn				<b>Delivery Condition:</b> OD Polished to 240 Grit					
Steel Grade	Heat Number	Lot Number	Dimensions	Quantity					
				Pieces	Feet				
TP304/TP304L	YX1602-588	10-40	1/2"x0.035"x20'	500	10,000				
<b>Chemical Composition by Weight (%)</b>									
Element	C	Mn	P	S	Si	Cr	Ni	Mo	Co
Requirements	≤0.035	≤2.00	≤0.045	≤0.030	≤1.00	18.00-20.00	8.00-12.00	-	-
Ladle Analysis	0.018	1.20	0.034	0.002	0.32	18.15	8.05	-	-
Product Analysis	0.015	1.08	0.036	0.003	0.33	18.52	8.43	-	-
<b>Mechanical Properties</b>									
Test Item	Elongation (% in 2")	Tensile Strength (PSI) Rm			Yield Strength (PSI) Rp / 0.2%				
Requirements	≥35	≥75,000			≥30,000				
Test Results	61/62	99,000/100,000			44,000/45,000				
Test Item	Reduction of Area Z (%)	Hardness	Cold Bend Test	Flaring Test	Flattening Test	Flange Test	P.M.I. Test		
Requirements	-	HRB≤80	-	22%	e=0.09	-	-		
Test Results	-	77/79	-	Passed	Passed	-	OK		
Test Item	Eddy Current Test	Air Underwater Pressure Test	Ultrasonic Test	Intergranular Corrosion Test	Macroscopic Inspection				
Requirements	ASTM E 426	-	-	ASTM A262 E	End Cut	Appearance			
Test Results	Passed	-	-	OK	OK	OK			

ISO 9001:2008 Certified by CAS 117 16 QU 0053-06 ROS

PED Certified by SZUTEST 2195-PED-1526002

**Additional Remarks:**

- (1) All tubes annealed to above 1900 Deg F and water quenched below 800 Deg F in 3 minutes
- (2) All tubes tested per ASTM A1016-14
- (3) Materials is NACE MR0103-2007 compliant (per Section 2.5)
- (4) Materials is NACE MR0175/ISO 15156-2003 compliant (per Section 4.2.1)
- (5) In Compliance with EN 10204-3.1
- (6) In Compliance with RoHS Stipulation
- (7) No weld repair performed
- (8) Free from mercury contamination
- (9) Free from radioactive contamination
- (10) Billets melt and pipes/tubes manufactured in China
- (11) All tubes 100% PMI tested
- (12) All tubes 100% Eddy Current tested

**CANNOT CERTIFY COMPLIANCE  
FAR BAA / DFARS BAA / FAR TAA**



By:



*James Shi*

James Shi / Manager

Quality Control Department

We hereby certify that this report is true and correct.

**Jiangsu Pufa Stainless Steel Tube Co., Ltd.**

No. 99, Xuean Middle Road, Dongchen Town, Rugao City, Jiangsu Province, P.R.China

DAS  
48  
9-89  
17/02/08

**PUFA™**

Producer of Premium Stainless Steel Seamless Tubes

### MILL TEST REPORT

Purchaser.: TW METALS-Cranbury				Certificate No.: 16-1-13					
Contract No.: TWM P.O.No.: M49342471				Date of Issue.: 2016.1.5					
Commodity: Stainless Steel Seamless Tubes				Specifications: ASTM A213-15c/ASME SA213-15/ASTM A269-15a EAW					
Process: Cold Drawn				Delivery Condition: OD Polished to 240 Grit					
Steel Grade	Heat Number	Lot Number	Dimensions				Quantity		
							Pieces	Feet	
TP304/TP304L	YX1501-783	11-63	3/4" x 0.049" x 20'				250	5,000	
Chemical Composition by Weight (%)									
Element	C	Mn	P	S	Si	Cr	Ni	Mo	Co
Requirements	≤0.035	≤2.00	≤0.045	≤0.030	≤1.00	18.00-20.00	8.00-12.00	-	-
Ladle Analysis	0.012	0.68	0.031	0.001	0.37	18.35	8.05	-	-
Product Analysis	0.019	0.70	0.033	0.002	0.39	18.37	8.31	-	-
Mechanical Properties									
Test Item	Elongation (% in 2")		Tensile Strength (PSI)			Yield Strength (PSI)			
			Rm			Rp / 0.2%			
Requirements	≥35		≥75,000			≥30,000			
Test Results	65/66		89,000/90,000			34,000/35,000			
Test Item	Reduction of Area Z (%)	Hardness	Cold Bend Test	Flaring Test	Flattening Test	Flange Test	P.M.I. Test		
Requirements	-	HRB≤80	-	22%	e=0.09	-	-		
Test Results	-	75/77	-	Passed	Passed	-	OK		
Test Item	Eddy Current Test	Air Underwater Pressure Test	Ultrasonic Test	Intergranular Corrosion Test	Macroscopic Inspection				
Requirements	ASTM E 426	-	-	ASTM A262 E	End Cut	Appearance			
Test Results	Passed	-	-	OK	OK	OK			

ISO 9001:2008 Certified by Intertek 110703068

PED Certified by SZUTEST 2195-PED-1526002

**Additional Remarks:**

- (1) All tubes annealed to above 1900 Deg F and water quenched below 800 Deg F in 3 minutes
- (2) All tubes tested per ASTM A1016-14
- (3) Materials is NACE MR0103-2007 compliant (per Section 2.5)
- (4) Materials is NACE MR0175/ISO 15156-2003 compliant (per Section 4.2.1)
- (5) In Compliance with EN 10204-3.1
- (6) In Compliance with RoHS Stipulation
- (7) No weld repair performed
- (8) Free from mercury contamination
- (9) Free from radioactive contamination
- (10) Billets melt and pipes/tubes manufactured in China
- (11) All tubes 100% PMI tested
- (12) All tubes 100% Eddy Current tested

**CANNOT CERTIFY COMPLIANCE  
FAR BAA / DFARS BAA / FAR TAA**

DAS  
14  
9-89

17/02/09



By:

*James Shi*

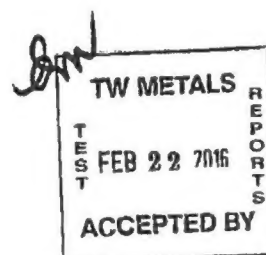
James Shi / Manager

Quality Control Department

We hereby certify that this report is true and correct.

**Shanghai Pufa Stainless Steel Pipe Factory**

No. 59, Shuangye Road, Wanggang, New Pudong District, Shanghai, China





Benteler Steel/Tube GmbH  
Postfach 13 40  
33043 Paderborn  
Deutschland  
Tel.: +49 5254.81-0 Fax: +49 5254.13666

**BENTELER**

Steel/Tube

**ABNAHMEPRÜFZEUGNIS EN 10204-3.1**

INSPECTION CERTIFICATE EN 10204-3.1  
CERTIFICAT DE RECEPTION EN 10204-3.1  
EN 10204:2005-01

Benteler Steel/Tube GmbH - Postfach 1340 - 33043 Paderborn - Deutschland

TW Metals

The Aboretum, Suite 204  
760 Constitution Drive  
EXTON PA 19341  
USA

Dokument-Nr.: 41-961797/001/P

Document No.:  
No. du document:

Kunden-Bestell-Nr.: 46004384 TW M49353474

Purchase Order No.:  
No. de commande du client:

Benteler Auftrags-Nr.: 1625993

Benteler Order No.:  
No. de commande Benteler:

Versandanzeigen-Nr.: 4170922

Dispatch Note No.:  
No. d'avis d'expédition:

Produkt: NAHTLOSE STAHLROHRE

Product: SEAMLESS STEEL TUBES

Produit: TUBES D'ACIER SANS SOUDURE

Lieferbedingungen: AMS-T-6736B Type 1, ASTM-A 519-2006, MIL-T-6736B Type 1, AMS6360 Rev. M, AMS 2301K

Terms of delivery:

Conditions de livraison:

Maße - Toleranzen: AMS 2253E-83, Aircraft Type, Seamless, Cold Finished

Dimensions-tolerances:

Dimensions-tolerances:

Stahlsorte:

Steel grade:

Nuance d'acier:

Lieferzustand:

Delivery condition:

État de livraison:

Produktkennzeichnung:

FSD: BENTELER AMS6360M-AMS-T-6736 B 1-MIL-T-6736 B 1-AMS 2301K 4130 Condition N HEAT-NO.

Product marking:

Marquage du produit:

AEZ = Ätzenbeschriftung, Etching ink marking, Graure à l'encre . PK = Farbstrahlzeichnung, color marking, marquage par couleur . FS = Farbschablonierung, paint stencilling, marquage par peinture . FSD = Farbstrahlmarker, Color jet printer, imprimante à jet d'encre de couleur . LK = Laserkennzeichnung, Laser marking, Marquage laser . PKE = Etantenkennzeichnung, tag marking, marquage sur étiquette . PS = Prägestempel, die stamp, marquage par poinçonnage . TS = Tintenstrahlkennzeichnung, Ink jet spray marking, imprimante à jet d'encre .

Blatt: 1 / 4  
Page:  
Page:

Hersteller: Warmrohrwerk/Zieherei  
Manufacturer: (DIN EN ISO 9001, ISO/TS-16949 CERTIFIED BY TÜV NORD CERT)  
Producteur: (PED 2014/68/EU CERTIFIED BY TÜV NORD SYSTEMS)



Herstellerzeichen:  
Manufacturer's brand:  
Marque du producteur:

Stempel des Abnahmebeauftragten: WA

Stamp of the inspection representative:

Poinçon du contrôleur:

Stahlschmelzungsverfahren: ELEKTROSTAHL

Steelmaking process: ELECTRIC FURNACE

Procédé d'élaboration de l'acier: FOUR ELECTRIQUE



DAS  
14/7/102/09  
9-89

**ABNAHMEPRÜFZEUGNIS EN 10204-3.1**  
INSPECTION CERTIFICATE EN 10204-3.1  
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 41-981797/001/P  
Document No.:  
No. du document:  
Prüf-Nr.:  
Inspection No.:  
No. du certificat:  
Blatt: 2 / 4  
Page:  
Page:

Pos.	Stück	Maße	Gesamtlänge	Gewicht	Schmelzen-Nr.	Prüfdruck	Rohr-Nr.-Gruppe	Vielfachlängen
Item	Number	Dimensions	Length total	Weight	Heat No.	Test pressure	Tube number group	Multiple lengths
Poste	Nombre	Dimensions	Longueur totale	Poids	No. de coulée	Pression d'épreuve	Série de no. des tubes	Longueurs multiples
			feet	lbs				
0003	154	0.750" O.D. * 0.049" WT 20 FT - 24 FT	3688,32	1345	598618			

**Schmelzenanalyse [%] / Heat analysis [%] / Analyse sur coulée [%]**

Pos.	Schmelzen-Nr.	C	SI	MN	P	S	CR	MO	NI	CU
Item	Heat No.									
Poste	No. de coulée									
0003	598618	0,310	0,260	0,54	0,010	0,001	0,88	0,17	0,14	0,17

**Produktanalyse [%] / Product analysis [%] / Analyse sur produit [%]**

Pos.	Schmelzen-Nr.	C	SI	MN	P	S	CR	MO	NI	CU
Item	Heat No.									
Poste	No. de coulée									
0003	598618	0,310	0,280	0,52	0,009	0,001	0,89	0,17	0,12	0,15

**Prüfergebnisse / Test results / Résultats des essais**

Die Rohre wurden zerstörungsfrei geprüft:  
The tubes are non destructive tested:  
Les tubes ont passé un essai non destructif:  
ET-test: acc. to ASTM-A 450; ET - Test method: acc. to ASTM-E 309; for Imperfections;  
ET-test: ET with rotating pancake coils; according to EN 10246-3; imperfections;  
Notch depth: 0,30 mm; notch width < = notch depth; notch length min. 2 x transducer width (max. 50 mm)

Augensichtkontrolle:	PASSED	Materialverwechslungsprüfung:	PASSED	Maßkontrolle:	PASSED
Visual inspection:		Material conformity test:		Dimensions examination:	
Examen visuel:		Vérification de la nuance:		Vérification des dimensions:	

**Ergebnisse der mechanischen Prüfung / Results of mechanical testing / Résultats des essais mécaniques**

Die Probenahme erfolgte an Vielfachlängen.  
The sampling was carried out on multiple lengths.  
L'échantillonnage était réalisé aux longueurs multiples.

DAS  
14/7/02/09  
9-89



**ABNAHMEPRÜFZEUGNIS EN 10204-3.1**

INSPECTION CERTIFICATE EN 10204-3.1  
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 41-961797/001/P

Document No.:  
No. du document:

Zugversuchslängs bei RT, Vollprobe / Tensile test longitudinal at RT, Full section test specimen / Essai de traction longitudinale à TA, Eprouvette a section complete

Pos.	Proben-Nr.	Schmelzen-Nr.	Probenabmessung	Streckgrenze	Zugfestigkeit	Dehnung
Item	Specimen No.	Heat No.	Specimen dimensions	Yield strength	Tensile strength	Elongation
Poste	No. de l'éprouv.	No. de coulée	Dimensions de l'éprouv.	Limite élastique	Résistance à la traction	Allongement
Anforderungen			mm	Rp 0,2 %	Rm	A2"
Requirements				KSI	KSI	%
Exigences				MIN 75	MIN 95	MIN 12.00
0003	000001	598618	19,05 X	1,25	120	128
0003	000002	598618	19,05 X	1,25	120	128
0003	000003	598618	19,05 X	1,25	118	127
0003	000004	598618	19,05 X	1,25	120	128
0003	000005	598618	19,05 X	1,25	118	128

Randentkühlung / Surface decarburization / Décarburation superficielle

Pos. / Item / Poste: 0003

acc. to AMS-6360, partial decarburization outside max. 0.009 in, partial decarburization inside max. 0.009 in, partial decarburization outside and inside max. 0.012 in, partial decarburization outside and inside max. 0.305 mm, without total decarburization; partial decarb. out. max.: 0,229 mm; partial decarb. ins. max.: 0,229 mm

Vermerk / Remark / Remarque

Pos. / Item / Poste: 0003

Certificate remarks: The steel grade corresponds to MIL-T-6736B, AMS 6360M, material free from mercury contamination, FAR BAA: 52.225-1 CANNOT COMPLY, DFARS BAA: 252.225-7001 CAN COMPLY, FAR TAA: 52.225-5 CAN COMPLY, No weld repair has been carried out, Country of origin of the material and heat: Germany, Aircraft quality steel acc. to AMS 2301K; see appendix page 1 of 1

Pos. / Item / Poste: 0003

Macroscopic examination: acc. to ASTM-E 381

Pos. / Item / Poste: 0003

Magnetic particle inspection: acc. to AMS 2301K/ASTM-E 1444, on prematerial

Pos. / Item / Poste: 0003

Grain size: acc. to ASTM-E 112; Grain size and finer: 5; Grain size: Longitudinal structure micrography, On prematerial

Verkäufer(in) / Sales Personnel / Personne chargée : Mr Schwarz, Tel.: 05254 81-204311, Fax: 204391

DAS  
14 / 17/02/09  
9-89

Benteler Steel/Tube GmbH  
Postfach 13 40  
33043 Paderborn  
Deutschland  
Tel.: +49.5254.81-0 Fax: +49.5254.13666

**BENTELER** 

Steel/Tube

**ABNAHMEPRÜFZEUGNIS EN 10204-3.1**  
INSPECTION CERTIFICATE EN 10204-3.1  
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.:  
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No. du document:

41-961797/001/P

Prüf-Nr.:  
Inspection No.:  
No. du certificat:

Blatt: 4 / 4  
Page:  
Page:

Paderborn Schloß Neuhaus, 19.09.2016, TEL.: 05254.81-201765 FAX: 05254.81-201752

Abnahmebeauftragter  
Inspection representative

Contrôleur

i.A. THOMAS GOLLAN / GUT

Es wird bestätigt, daß die gelieferten Erzeugnisse den techn. Lieferbedingungen des Auftrages entsprechen. Dieses Dokument wurde mittels EDV erstellt und ist ohne Unterschrift rechtsgültig.  
We certify that the supplied products comply with the order specification. This document was prepared by means of electronic data processing and is valid without signature.  
Nous attestons que les produits livrés sont conformes aux stipulations de la commande. Ce document a été établi par traitement électronique de l'information et est valide sans signature.

Benteler Steel/Tube GmbH  
Residenzstraße 1  
33104 Paderborn  
Germany  
Tel.: 49.5254.81-0 Fax: 49.5254.13666

**BENTELER**  
Steel/Tube

Abnahmeprüfzeugnis EN 10204-3.1 / Anhang  
Inspection Certificate EN 10204.3.1 / appendix  
Certificat de réception EN 10204-3.1 / appendice

Dokument-Nr.  
Document No.:  
No. de document:

41-961797/001/P

Blatt: von  
Page: 1 of 1  
Page: de

Halbzeuguntersuchung: Stahlsorte 4130 / Semi finished product examination: grade 4130 / Produit semi-fini: nuance 4130

Schmelzen-Nr. Heat No. Coulée No.	Position Item Poste	Korngröße Grain size Grosseur de grain (ASTM-E 112)	Härtbarkeit (min. Anforderungen) Hardenability (min. requirements) Trempabilité (exigence min.) (ASTM-A 255)	Magnetpulverprüfung Magnetic particle inspection Essai à la poudre magnétique (AMS 2301K)	Makroätzung Macrostructure test Essai de macrostructure (ASTM-E 381)
598618 Decarburization Depth	003	min. 5	J(5/16") min. 35 HRC	F max. 0,34	max. S 2
		9 Outside 0,000 mm	42 Inside 0,000 mm	S max. 0,25	max. R 1
			34	0,029	S 2
				0,024	R 1
					C 2

**BENTELER**  
Steel/Tube GmbH

Der Stahl ist frei von Quecksilberverunreinigungen. / The steel is free of mercury contamination. / L'acier est libre des contaminations de mercure.

DAS  
14.7/02/09

Abnahmebeauftragter  
Inspection representative  
Contrôleur

Thomas Gollan

Paderborn Schloß Neuhaus, 21.09.2016  
Tel.: (0)5254.81-201760 Fax: (0)5254.81-201752

# KAISER ALUMINUM FABRICATED PRODUCTS

*Best in Class*

## CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

KAISER ALUMINUM  
FABRICATED PRODUCTS, LLC  
6573 W. WILLIS ROAD  
CHANDLER, AZ 85226

CUSTOMER PO NUMBER: M49353002-1		CUSTOMER PART NUMBER: 43284		PRODUCT DESCRIPTION: Drawn Seamless Tube/Pipe	
KAISER ORDER NUMBER: 220852	LINE ITEM: 001	SHIP DATE: 07/15/2016	KAISER LOT NUMBER: F00218927	ALLOY: 6061	TEMPER: T6
WEIGHT SHIPPED: 739.000 LB	QUANTITY: 274.000 PCS	B/L NUMBER: 222328	DIAM/DAF/THKNS: 	WIDTH: 	LENGTH: 12.000 FT
SHIP TO: TW METALS INC 27 ENGLEHARD DRIVE EXIT 8A OFF NJ TPK MONROE TWP, NJ 08831 USA			SOLD TO: TW METALS INC 760 CONSTITUTION DRIVE SUITE 204 EXTON, PA 19341 USA		

### Actual Physical Properties

REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	ELONG%	HARDNESS	CON%IACS	BEND
F00218927	0002	1	47.7	39.9	20.5	N/A	N/A	N/A
F00218927	0002	1	47.7	40.9	18.0	N/A	N/A	N/A

### Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	0.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	0.00
D75918	.58	.31	.22	.06	.99	.10	.06	.03	.00	.00	.00	.01	.02

### Applicable Requirements:

Description: OD: 1.0000"; Wall: 0.0650"; Round @  
AMS 4082P AMS-WW-T-700/6C ASTM B210-12 WW-T-700/6F  
WE TAKE EXCEPTION TO PARA. 5.2.1., Per AMS 4082P, WAS NOT OILED.  
This Product Complies to FAR BAA, DFARS BAA, FAR TAA  
COMPLIES TO DIN EN 10204 JAN 2005  
No Weld Repair. Mercury Free.

DAS  
14  
9-89

17/02/09

TW METALS	
TEST	REPORT
JUL 22 2016	
ACCEPTED BY	

### Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA  
MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA  
(DFARS 252.225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAA (FAR 52.225-5  
TRADE AGREEMENTS).

Plant Serial: 00022571  
Kaiser Order Number: 220852  
Line Item: 001

**KAISER**  
**ALUMINUM**  
**FABRICATED PRODUCTS**

*Best in Class*

**CERTIFIED TEST REPORT**

<http://Online.KaiserAluminum.com>

KAISER ALUMINUM  
FABRICATED PRODUCTS, LLC  
6573 W. WILLIS ROAD  
CHANDLER, AZ 85226

**CERTIFICATION**

Kaiser Aluminum Fabricated Products, LLC ('Kaiser') hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms & conditions of sale. Test reports are on file subject to examination.

Hans Kattentidt, Quality Manager



# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M 304TRO 500W.035

PO / BATCH NO.: PO 35149 / B136760

DATE: 17/02/08

MATERIAL CERT REC'D: yes

THICKNESS ORDERED: .500 W 035

QUANTITY RECEIVED: 60

THICKNESS RECEIVED: .499 W 035

QUANTITY INSPECTED: 60

SHEET SIZE ORDERED: N/A

QUANTITY REJECTED: 0

SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT FINISH	<input checked="" type="radio"/> Y <input type="radio"/> N <input type="radio"/>	
CORROSION	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/> Y <input type="radio"/> N <input type="radio"/>	
CORRECT MATERIAL	<input checked="" type="radio"/> Y <input type="radio"/> N <input type="radio"/>	304
CORRECT THICKNESS	<input checked="" type="radio"/> Y <input type="radio"/> N <input type="radio"/>	.499 W.035
PHOTO REQUIRED	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT MATERIAL	<input checked="" type="radio"/> Y <input type="radio"/> N <input type="radio"/>	ASTM A213
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/> Y <input type="radio"/> N <input type="radio"/>	Heat # PX1602-588
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/> Y <input type="radio"/> N <input type="radio"/>	M 304TRO 500W.035
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/> Y <input type="radio"/> N <input type="radio"/>	M 136760
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="radio"/> N <input type="radio"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="radio"/> N <input type="radio"/>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW				
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING		N	A	

*testers located in the Quality Office*

<b>QC 18 INSPECTION</b>		<b>ENGINEERING SIGNOFF (if required)</b>	
INSPECTED BY: <u>48</u>	SIGNED OFF BY: _____		
DATE: <u>17/02/08</u>	DATE: _____		

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304TRO.750W.049 PO / BATCH NO: 35749/134766  
 DATE: 17/02/09

MATERIAL CERT REC'D: Y THICKNESS ORDERED: .049  
 QUANTITY RECEIVED: 100' THICKNESS RECEIVED: .045  
 QUANTITY INSPECTED: 100' SHEET SIZE ORDERED: \_\_\_\_\_  
 QUANTITY REJECTED: \_\_\_\_\_ SHEET SIZE RECEIVED: \_\_\_\_\_

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="checkbox"/>	
CORRECT FINISH	<input checked="" type="checkbox"/> N	
CORROSION	Y <input checked="" type="checkbox"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/> N	
CORRECT MATERIAL	<input checked="" type="checkbox"/> N	304
CORRECT THICKNESS	<input checked="" type="checkbox"/> N	.045
PHOTO REQUIRED	Y <input checked="" type="checkbox"/>	
CORRECT MATERIAL	<input checked="" type="checkbox"/> N	ASTM A213 ASTM A269
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/> N	HEAT# PX1501783
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/> N	M304TRO.750W.049
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/> N	M136766
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="checkbox"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="checkbox"/>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW				
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

*testers located in the Quality Office*

<b>QC 18 INSPECTION</b>	<b>ENGINEERING SIGNOFF (If required)</b>
INSPECTED BY: <u>DAS</u> <u>14</u> DATE: <u>17/02/09</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL M413DNTD.750W.049 PO / BATCH NO 35149/136760  
 DATE: 17/02/09

MATERIAL CERT REC'D 481  
 QUANTITY RECEIVED: 481  
 QUANTITY INSPECTED: 481  
 QUANTITY REJECTED: \_\_\_\_\_

THICKNESS ORDERED .049  
 THICKNESS RECEIVED: .047  
 SHEET SIZE ORDERED: \_\_\_\_\_  
 SHEET SIZE RECEIVED: \_\_\_\_\_

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="radio"/>	
CORRECT FINISH	<input checked="" type="radio"/> N	
CORROSION	Y <input checked="" type="radio"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/> N	
CORRECT MATERIAL	<input checked="" type="radio"/> N	413D
CORRECT THICKNESS	<input checked="" type="radio"/> N	.047
PHOTO REQUIRED	Y <input checked="" type="radio"/>	
CORRECT MATERIAL	<input checked="" type="radio"/> N	MIL-T-6736 AMS 6371
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/> N	HEAT # 598618
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/> N	M304NTD.750W.049
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/> N	M136760
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="radio"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="radio"/>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW				
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

*testers located in the Quality Office*

<b>QC 18 INSPECTION</b>		<b>ENGINEERING SIGNOFF (if required)</b>	
INSPECTED BY: <u>DAS 14</u> DATE: <u>17/02/09</u>		SIGNED OFF BY: _____ DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

## MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M6061T6 T1.000W.D65

PO / BATCH NO: 35749/136760

DATE: 17/02/09

MATERIAL CERT REC'D: yes

THICKNESS ORDERED: .065

QUANTITY RECEIVED: 24'

THICKNESS RECEIVED: .062

QUANTITY INSPECTED: 24'

SHEET SIZE ORDERED: \_\_\_\_\_

QUANTITY REJECTED: \_\_\_\_\_

SHEET SIZE RECEIVED: \_\_\_\_\_

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="checkbox"/>	
CORRECT FINISH	<input checked="" type="checkbox"/> N	
CORROSION	Y <input checked="" type="checkbox"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/> N	
CORRECT MATERIAL	<input checked="" type="checkbox"/> N	<u>6061T6</u>
CORRECT THICKNESS	<input checked="" type="checkbox"/> N	<u>.062</u>
PHOTO REQUIRED	Y <input checked="" type="checkbox"/>	
CORRECT MATERIAL	<input checked="" type="checkbox"/> N	<u>ASTM B210</u>
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/> N	<u>HEAT# F002189270002</u>
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/> N	<u>M6061T6 T1.000W.D65</u>
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/> N	<u>M136760</u>
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="checkbox"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="checkbox"/>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW				
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS 14 9-09</u> DATE: <u>17/02/09</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

## PURCHASE ORDER

Purchase Order ID PO35149

Purchase Order Date 1/31/2017

PO Print Date 1/31/2017

Page Number 1 of 3

**Order From :**

VU-TWM001

TW METALS  
PO BOX 933014  
ALTANTA, GA 31193-3014  
US

**Ship To :** DART AEROSPACE LTD

1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

E-MAILED

JAN 31 2017

**Contact Name**

**Vendor Phone**

585 768 5600

**Ship To Contact**

**Ship To Phone**

**Ship Via:**

YRC COLLECT

**Ship Acct:**

**Buyer**

Chantal Lavoie

**Customer POID**

**Customer Tax #**

10127-2607

**Terms**

Net 30

**Currency**

USD

**FOB**

FCA - (Free Carrier)

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	M304TR0.500W.035	304 RD Tube .500 x .035W	2/6/2017 Yes 2/6/2017		60.00 f	\$1.50	\$90.00
MATERIAL: AISI 304/316 SA SEAMLESS ROUND TUBING AS PER ASTM A213 OR AMSE SA213 OR ASTM A269							
Line Total:							\$90.00
2	M304TR0.750W.049	304 RD Tube .750 x .049W	2/6/2017 Yes 2/6/2017		100.00 f	\$2.10	\$210.00
MATERIAL: AISI 304/316 SA SEAMLESS ROUND TUBING AS PER ASTM A213 OR AMSE SA213 OR ASTM A269							
Line Total:							\$210.00

8917-02-6

Note:

1/31/2017



Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

## PURCHASE ORDER

Purchase Order ID **PO35149**

Purchase Order Date 1/31/2017

PO Print Date 1/31/2017

Page Number 2 of 3

**Order From :**

VU-TWM001

TW METALS  
PO BOX 933014  
ALTANTA, GA 31193-3014  
US

**Ship To :** DART AEROSPACE LTD

1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

**Contact Name**

**Vendor Phone** 585 768 5600

**Ship To Contact**

**Ship To Phone**

**Ship Via:** YRC COLLECT

**Ship Acct:**

**Buyer**

Chantal Lavoie

**Customer POID**

**Customer Tax #** 10127-2607

**Terms** Net 30

**Currency** USD

**FOB** FCA - (Free Carrier)

3	M4130NT0.750W.049	4130 RD Tube .750 x.049W	2/6/2017	40.00		\$6.00	\$240.00
---	-------------------	-----------------------------	----------	-------	--	--------	----------

Yes  
2/6/2017

MATERIAL: AISI 4130N SEAMLESS STEEL TUBING  
AS PER MIL-T-6736 OR AMS 6371/6360/6361  
6362/6373/6374

**Line Total:** **\$240.00**

4	M6061T6T1.000W065	6061T6 RD TUBE 1.00 x .065w	2/6/2017	20.00		\$2.96	\$59.20
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Yes  
2/6/2017

MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING  
AS PER WW-T-700/6 OR QQ-A-200/8 OR QQ-A-225/8 OR  
AMS 4080 OR AMS 4082 OR AMS 4083 OR ASTM B210 OR  
ASTM B241

**Line Total:** **\$59.20**

**Note:**

1/31/2017



Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

## PURCHASE ORDER

Purchase Order ID **PO35149**

Purchase Order Date 1/31/2017

PO Print Date 1/31/2017

Page Number 3 of 3

**Order From :**  
TW METALS  
PO BOX 933014  
ALTANTA, GA 31193-3014  
US

VU-TWM001

**Ship To :** DART AEROSPACE LTD  
1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

**Contact Name**  
**Vendor Phone** 585 768 5600  
  
**Ship To Contact**  
**Ship To Phone**  
**Ship Via:** YRC COLLECT  
**Ship Acct:**

**Buyer** Chantal Lavoie  
**Customer POID**  
**Customer Tax #** 10127-2607  
**Terms** Net 30  
**Currency** USD  
**FOB** FCA - (Free Carrier)

5	71401-45	PROCUREMENT QUALITY CLAUSES	2/6/2017	1.00	\$0.00	\$0.00
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Procurement Quality Clauses  
A005 right of entry  
A012 chemical and physical test report  
A016 personnel qualification  
A017 raw material identification (as applicable)  
A026 certification of material conformance  
A041 quality management system  
A042 dart notification by supplier  
A043 retention of quality documents

No  
2/6/2017

Sept 02-6

**Line Total:** \$0.00

**PO Total:** \$599.20

**Note:** Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit [www.dartaerospace.com](http://www.dartaerospace.com) for further explanation.

Change Nbr: 1

Change Date: 1/31/2017